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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 3
ITAAC Closure Notification on Completion of ITAAC Item C.2.5.04.04a [Index Number 561]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 3 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item C.2.5.04.04a [Index Number 561]. This ITAAC confirms the main and startup feedwater system leading edge flow meter calculated calorimetric power uncertainty measurement values are bounded by the safety analysis. The closure process for this ITAAC is based on the guidance described in Nuclear Energy Institute (NEI) 08-01, "Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52," which was endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) request NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli A. Roberts at 706-848-6991.

Respectfully submitted,

Kelli Roberts for MJY

Michael J. Yox
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3
Completion of ITAAC C.2.5.04.04a [Index Number 561]

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Southern Nuclear Operating Company
ND-21-0461
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 3
Completion of ITAAC C.2.5.04.04a [Index Number 561]

ITAAC Statement

Design Commitment

4. The plant calorimetric uncertainty and plant instrumentation performance is bounded by the 1% calorimetric uncertainty value assumed for the initial reactor power in the safety analysis.

Inspections, Tests, Analyses

Inspection will be performed of the plant operating instrumentation installed for feedwater flow measurement, its associated power calorimetric uncertainty calculation, and the calculated calorimetric values.

Acceptance Criteria

a) The as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System;

b) the power calorimetric uncertainty calculation documented for that instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation; and

c) the calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analysis.

ITAAC Determination Basis

Inspections were performed of the plant operating instrumentation installed for feedwater flow measurement, its associated power calorimetric uncertainty calculation, and the calculated calorimetric values to demonstrate the plant calorimetric uncertainty and plant instrumentation performance is bounded by the 1% calorimetric uncertainty value assumed for the initial reactor power in the safety analysis.

a) The as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System;

VEGP 3 operating instrumentation selected for feedwater flow measurement is the Caldon [Cameron] Leading Edge Flow Meter (LEFM) CheckPlus™ System. The Caldon [Cameron] LEFM CheckPlus™ System was installed in accordance with the Unit 3 construction work packages which were inspected as part of Reference 1. The construction work packages include inspections to verify that the flow meters were properly installed and that the Caldon [Cameron] LEFM CheckPlus™ System output is connected to the Data Display and Processing System (DDS) in accordance with the design documentation, thus providing the input to the as-built DDS for the feedwater flow measurement.

Inspection documentation contained in Reference 1 confirms that the as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System.

b) The power calorimetric uncertainty calculation documented for that Instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation; and

Westinghouse has created a methodology to determine the overall power uncertainty based upon the inputs of individual sensor uncertainties. APP-GW-GL-046, "AP1000 Power Calorimetric Uncertainty Methodology Assuming a Generic Flow Measurement" (Reference 2), describes the Westinghouse methodology for performing instrument uncertainty calculations to confirm the secondary side power calorimetric uncertainty is less than 1.0% Rated Thermal Power (RTP), and references previous NRC acceptance of its use in calorimetric uncertainty calculations.

The Caldon [Cameron] LEFM CheckPlus™ System was calibrated in a certified laboratory using a piping configuration representative of the plant piping design prior to installation (Reference 3). A Unit 3 Quality Assurance Data Package (QADP) (Reference 4) for the Caldon [Cameron] LEFM CheckPlus™ System was prepared by the flow meter vendor at the factory and reviewed prior to shipping release. The QADP verified that the flow meter characteristics meet or exceed the requirements listed on the flow meter data sheet. The QADP provides confirmation of flow meter vendor, type, and model.

The power calorimetric uncertainty calculation documented for that instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation.

c) The calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analysis.

Reference 2 documents an accepted Westinghouse calorimetric uncertainty methodology based upon generic sensor uncertainty values and assumed environmental factors. Using the generic values and assumptions. Reference 2 proves the ability to bound the calorimetric uncertainty value to the 1% assumed in the safety analyses.

An inspection of References 2, 3 and 4 was performed to verify uncertainty values for the Caldon [Cameron] LEFM CheckPlus System. Review of these documents verify system accuracy is bounded by the assumed 1% calorimetric error, and demonstrate that the safety analyses remain valid. The Caldon [Cameron] LEFM CheckPlus System Commissioning procedure requires plant power level to be above 95%. Data obtained during commissioning shall be used to confirm the installation meets the site uncertainty analysis.

Inspection of References 2, 3 and 4 confirmed that the calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analysis.

Together, References 1, 2, 3 and 4 provide evidence that the ITAAC Acceptance Criteria requirements are met:

- The as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System;

- The power calorimetric uncertainty calculation documented for that instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation; and

- The calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analyses.

Reference 1 is available for NRC inspection as part of the Unit 3 ITAAC C.2.5.04.04a Completion Package (Reference 5).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of findings pertaining to the subject ITAAC and associated corrective actions. This review found there are no relevant ITAAC findings associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC C.2.5.04.04a (Reference 5) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC C.2.5.04.04a was performed for VEGP Unit 3 and that the prescribed acceptance criteria were met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. SV3-FWS-ITR-800561, ITAAC Technical Report, "Unit 3: DDS Feedwater Flow Measurement Input," Revision 0
2. APP-GW-GL-046, "AP1000 Power Calorimetric Uncertainty Methodology Assuming a Generic Flow Measurement," Revision 0
3. SV0-JE25-VTR-101, "Vogtle 3, 4 Ultrasonic Flow Meter Accuracy Assessment and Meter Factor Calculation," Revision 1
4. SV3-JE25-VQQ-001, "Quality Release & Data Package for JE25 SV3," Revision 0
5. C.2.5.04.04a-U3-CP-Rev0, ITAAC Completion Package